Truckee Meadows Flood Control Project
January 2005 Newsletter

US Army Corps of Engineers

The Corps Planning Process Explained

The Corps planning process consists of the following six iterative steps:

1. Specify Problems and Opportunities
2. Inventory and Forecast Conditions
3. Formulate Alternative Plans
4. Evaluate Effects of Alternative Plans
5. Compare Alternative Plans
6. Select Recommended Plan.

Over the next few months, this newsletter will include explanations of these steps to help you understand the process that goes into the Corps selecting the alternative that will be presented in our General Reevaluation Report (GRR) for Congressional consideration.

Currently, the Truckee Meadows Flood Control Project is at Step 3, formulating alternative plans. This step of the planning process produces solutions that achieve all or part of one or more of our projects planning objectives. The **planning objectives** are:

Flood Damage Reduction

- Reduce flooding along the Truckee River from over bank flows to the fullest extent consistent with Federal participation and community financial capabilities.
- Reduce potential loss of life from flooding.
- Remove Reno-Sparks Metropolitan area from National Flood Insurance Program base floodplain by reducing flood risk to no greater than 1 in 100 chance of flooding in any given year.

Ecosystem Restoration

- Restore riparian habitat quality and quantity along the Truckee River from Reno to Pyramid Lake.
- Restore hydro-geomorphic structure and functions of the Truckee River from Reno to Pyramid Lake.
- Restore wetland habitat quality and quantity within the historical floodplain of the Truckee River from Reno to Pyramid Lake.
- Reduce non-native invasive plant species along the Truckee River from Reno to Pyramid Lake.
- Restore in-stream aquatic habitat in the Truckee River from Reno to Pyramid Lake.

Recreation

- Increase recreational opportunities along the Truckee River from Reno to Vista.

Potential solutions that meet these objectives come in the form of alternative plans, which are built from management measures. A **management measure** is a feature or an activity that can be implemented at a specific geographic site to address one or more planning objectives. These measures may be structural, (like constructing a levee, flood proofing of homes, or planting vegetation) to non-structural, which requires no construction, (like a floodplain management plan or evacuation plan). These measures come in different sizes or scales, (like deepening a channel by 30 feet and/or by 40 feet), may use different materials or methods, or are placed in different locations.

An **alternative** is a set of one or more of these management measures that are combined together to address one or more of the planning objectives. We use plan formulation to build alternative plans that meet our project objectives without violating any of our constraints (like water rights, accessibility of land due to urban environments, etc). Our project planning objectives and constraints describe what the Corps intends to do to solve flooding and

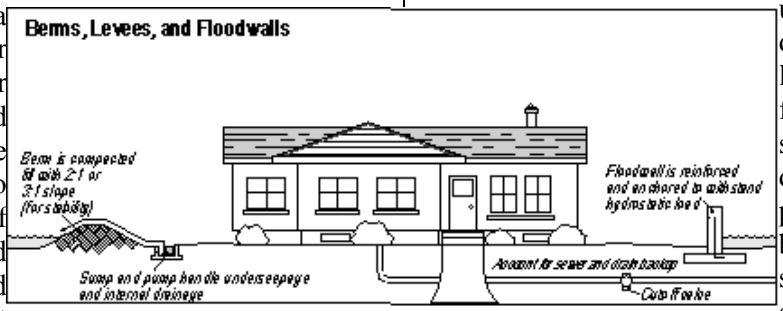
ecosystem restoration problems in the project study area and realize our opportunities. Alternative plans are formulated to address these objectives. Accordingly, some plans will do better than others, and each plan must address at least one of our objectives.

Plans will be formulated, and reformulated during this process to make them more efficient, effective, complete and acceptable as more information becomes available. Plan formulation is complete when we have an array of plans that address our planning objectives. Throughout this process, we have to evaluate which is the best of plan or solution to meet our objectives.

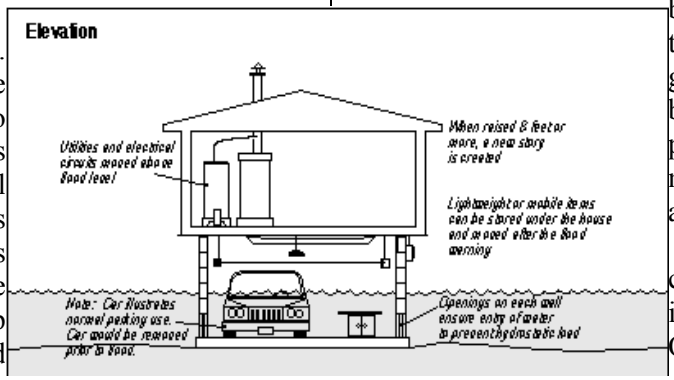
In the next Newsletter we will describe Step 4, evaluation of the alternative plans.

General Flood Proofing Techniques

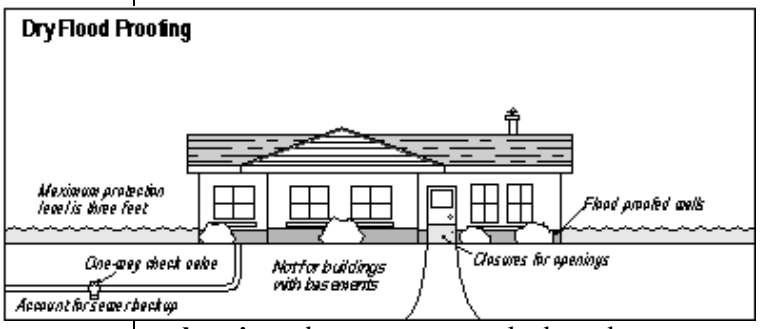
Flood proofing is a process for preventing or reducing flood damages to the structure and/or to the contents of buildings located in flood hazard areas. For the most part, it involves altering or changing existing properties. There are three general approaches to flood proofing of structures: raising the structure; constructing barriers to stop floodwater from entering the building; and wet flood proofing.



Raising the Structure. One technique is to raise the structure in place so that the lowest floor is above the expected level of floodwaters; this is commonly referred to as "**elevation**." The structure is jacked up and a new or extended foundation is constructed underneath the structure. Cost is an important factor to consider in elevating structures. Lighter wood frame buildings are easier and cheaper to raise than masonry buildings. Masonry buildings not only are more expensive to raise, but are susceptible to cracks.



Constructing Barriers. There are two techniques employed in constructing barriers. The first technique involves constructing **freestanding**

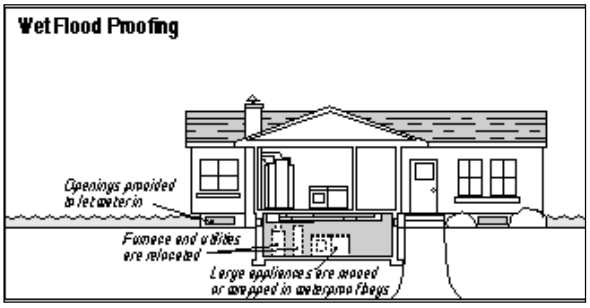


barriers that are not attached to the structure. The three primary types of freestanding barriers used to reduce flood damages are berms, levees, or floodwalls. These structures have been described in previous newsletters, but can be summarized to be earthen or concrete structures constructed near or adjacent to the structures to stop the floodwaters from reaching the building.

The second technique that can be used to construct a barrier against floodwaters is known as "**dry flood proofing**." With this technique, a building is sealed so that floodwaters cannot get inside. All areas below the flood protection level are made watertight. Walls are coated with waterproofing compounds or impermeable sheeting. Openings such as doors,

windows, sewer lines, and vents are closed with permanent closures or removable shields, sandbags, valves, etc. Some of the disadvantages of this technique are that many waterproofing compounds are not made to withstand the pressures of the water and will deteriorate over time. Also, closures on windows and doorways are dependent on adequate warning time for installation, as well as the presence of someone to install them correctly.

The third overall approach to flood proofing involves modifying a structure to allow floodwaters inside, but ensuring that there is minimal damage to the building's structure and to its contents. This type of protection is called "**wet flood proofing**." Wet flood proofing allows the floodwaters to enter the structure. The building is modified so that utilities and furnaces



are protected or relocated to an area above the anticipated flood level. Wet flood proofing is often used when dry flood proofing is not possible or is too costly. Wet flood proofing is generally appropriate in cases where an area is available above flood levels to which damageable items can be relocated or temporarily stored.

Several considerations for flood proofed structures. Flood proofed buildings are not meant to occupied during a flood! Flood conditions may change without sufficient warning, i.e. floods may exceed the level of protection provided. Also, flood proofing cannot be installed and forgotten. Maintenance must be performed on a scheduled basis to ensure that the flood proofing techniques adequately protect the structures over time.

Flood proofed buildings are not meant to occupied during a flood!

The Project Delivery Team Roles and Responsibilities – Real Estate Division

The Corps Real Estate Division employs a variety of disciplines during the development of flood control project alternatives, and, eventually, for the development and execution of the final project plan. **The Corps' Real Estate team consists of cartographic technicians, real estate appraisers, realty specialists, attorneys, and Notaries Public.** Each discipline plays a specific role on the Truckee Meadows Flood Control Project.

Cartographic technicians perform the following functions:

- Prepare and update list of parcels with owners and addresses those that could be affected by the project;
- Coordinate with the project sponsors/partners to obtain local maps in digital format;
- Review and approve property legal descriptions;
- Prepare and update a variety of project maps throughout the design phases that show properties affected by the project features (e.g., location of improvements, outline of property ownerships); Provide maps and legal descriptions to the Real Estate Appraisal Branch and the Projects Section in support of their efforts.

Real Estate Appraisers, who are federally licensed, perform the following functions:

- Beginning with the earliest investigation and reconnaissance phases through to the completion of the project, prepare valuations of the various interests in parcels that are required for the project (e.g., informal market surveys, formal appraisal reports).
- Review the qualifications of and organize the hiring of contract appraisers.

- Review for approval their valuation reports.
- Review for approval and for forwarding the applications for crediting of costs by project sponsors.
- Appraisers' analyses will include valuation of all partial interests, severance damages, and potential relocation for each property.
- Appear as expert witnesses in court proceedings when required.

Realty Specialists are part of the Real Estate Acquisition Branch of the Corps perform the following actions:

- Participate with project sponsors in securing both temporary (usually in feasibility) and long-term (usually during the construction phase of the project) property interests necessary for the Federal Plan. Temporary interests include: all rights-of-entry granting short term permissions typically lasting up to two years for surveys for wildlife and vegetation habitat, cultural resources, and soil sampling; and temporary construction easements. Long term interests include: easements for levees, floodwalls, culverts, channel improvements, roads, flowage or occasional flooding; and fee interest in weirs, dams, work areas and disposal and borrow areas required for future maintenance work.
- Prepare documents and correspondence including the Real Estate Plan to be included in the General Reevaluation Report and any directives needed to non-Federal sponsors to purchase property interests once there is an approved project.

The Real Estate **Attorney** performs the following duties on the project delivery team:

- Performs a takings analysis that involves analyzing the proposed project and determining whether there will be flooding of property, its effects on the property, and whether the effects mya result in a "taking" of property within the meaning of the Fifth Amendment to the U.S. Constitution.
- Works with project team and appraisers to determine alternate solutions for just compensation to landowners or for the protection of property affected by the project design.
- Prepares or reviews legal documents relating to securing property interests (e.g., agreements, deeds, easements, relocations, rights-of-entry).
- Appears as Government counsel in court proceedings.

Notaries Public document as genuine the signatures and authority of the Corps officials who execute legal instruments (e.g., deeds and easements).

Website Update
Responses to the comments and issues raised during the October 26, 2004 workshop held at Rainbow Bend have been posted to the website.

Information regarding "the power of eminent domain" that the Federal Government has is the focus of the pamphlet entitled "Acquiring Real Property for Federally Funded Projects" that has been posted to the website.

Making Contact

Visit our website at:
www.spk.usace.army.mil/projects/civil/truckeemeadows
Your questions and comments on the contents of this newsletter are welcome. Please contact us at the following e-mail address:
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Or by post at:
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HAPPY NEW YEAR!